Amendments to the Claims:

1-6. (canceled)

7. (currently amended) A system for lossless progressive streaming of images over a communication network, comprising:

an image storage device for storing a digital image;

a client computer coupled to the communication network, wherein said client computer generates and transmits across said communication network a request list containing the coordinates of data blocks required for rendering a region of interest (ROI) within said digital image, wherein said request list is ordered in accordance with a selected progressive mode;

a server computer coupled to said communication network and said image storage device, said server computer adapted to perform the steps of:

preprocessing said digital image through a low pass filter and a lossless wavelet transform to yield low pass scaling function data, high pass wavelet coefficient data and halfbit data;

receiving said request list from said client computer; [[and]]

progressively transmitting to said client computer subband coefficient data blocks corresponding to said region of interest in the order they were requested, said subband coefficient data blocks defined by said coordinates and determined in accordance with said wavelet coefficients and said half-bit matrix[[.]] ;

<u>wherein said lossless wavelet transform comprises the steps of:</u>

<u>first applying an X-direction wavelet transform to the output of said low pass filter to yield a temporal matrix therefrom;</u>

<u>second applying a low Y-direction wavelet transform to a low portion of said temporal matrix to yield LL and LH subband coefficients; and</u>

<u>third applying a high Y-direction wavelet transform to a high portion of said temporal matrix to yield HL and HH subband coefficients including a half-bit matrix containing half-bits, each half-bit corresponding to an HH subband coefficient.</u>

8-50. (canceled)

51. (currently amended) A server for lossless progressive streaming of images to a client over a communication network, comprising:

an image storage device for storing a digital image;

a processor in communication with said image storage device and adapted to perform the steps of:

preprocessing said digital image through a low pass filter and a lossless wavelet transform a predetermined number of times to yield low pass scaling function data, high pass wavelet coefficient data and halfbit data;

storing said low pass scaling function data, said high pass wavelet coefficient data and said halfbit data in a memory cache;

receiving a request for one or more data blocks from said client, each data block corresponding to a region of interest;

if a requested data block is not present in said memory cache, performing said step of preprocessing on a minimum portion of the region of interest requiring processing; [[and]]

transmitting to said client computer subband coefficient data blocks corresponding to said region of interest[[.]] ;

wherein said lossless wavelet transform comprises the steps of:

first applying an X-direction wavelet transform to the output of said low pass filter to yield a temporal matrix therefrom;

second applying a low Y-direction wavelet transform to a low portion of said temporal matrix to yield LL and LH subband coefficients; and

third applying a high Y-direction wavelet transform to a high portion of said temporal matrix to yield HL and HH subband coefficients including a half-bit matrix containing half-bits, each half-bit corresponding to an HH subband coefficient.

52. (previously presented) A 2D wavelet transform method for use on a server for providing lossless progressive streaming of images to a client over a communication network, said server in communication with an image storage device for storing digital images, said method comprising the steps of:

first applying an X-direction wavelet transform to a digital image to yield a temporal matrix therefrom;

second applying a low Y-direction wavelet transform to a low portion of said temporal matrix to yield LL and LH subband coefficients; and

third applying a high Y-direction wavelet transform to a high portion of said temporal matrix to yield HL and HH subband coefficients including a half-bit matrix containing half-bits, each half-bit corresponding to an HH subband coefficient.

53. (previously presented) The method according to claim 52, wherein said X-direction wavelet transform comprises

$$\begin{cases} s(n) = \left\lfloor \dfrac{x(2n)+x(2n+1)}{2} \right\rfloor, \\ d(n) = x(2n+1) - x(2n). \end{cases}$$

wherein x(n) is the original image; s(n) is a low resolution version of x(n) and d(n) represents the difference between s(n) and x(n).

54. (previously presented) The method according to claim 52, wherein said low Y-direction wavelet transform comprises

$$\begin{cases} s(n) = x(2n) + x(2n+1), \\ d^{(1)}(n) = \left\lfloor \dfrac{x(2n+1)-x(2n)}{2} \right\rfloor, \\ d(n) = 2d^{(1)}(n). \end{cases}$$

wherein x(n) is the original image; s(n) is a low resolution version of x(n), and d(n) and $d^{(1)}(n)$ represent differences between s(n) and x(n).

55. (previously presented) The method according to claim 54, wherein bits able to be known a priori to a decoder are not encoded.

56. (previously presented) The method according to claim 54, wherein the least significant bit of d(n) is always zero and not encoded.

57. (previously presented) The method according to claim 52, wherein said high Y-direction wavelet transform comprises

$$\begin{cases} d^{(1)}(n) = x(2n+1) - x(2n), \\ HalfBit(n) = \left(d^{(1)}(n)\right) \bmod 2, \\ d(n) = \left\lfloor \dfrac{d^{(1)}(n)}{2} \right\rfloor, \\ s(n) = x(2n) + d(n). \end{cases}$$

wherein x(n) is the original image; s(n) is a low resolution version of x(n), d(n) and $d^{(1)}(n)$ represent differences between s(n) and x(n) and *HalfBit*(*n*) represents said half-bits.

58. (previously presented) The method according to claim 52, wherein said X-direction wavelet transform comprises

$$\begin{cases} s(n) = \left\lfloor \dfrac{x(2n) + x(2n+1)}{2} \right\rfloor, \\ d^{(1)}(n) = x(2n+1) - x(2n), \\ d(n) = d^{(1)}(n) + \left\lfloor \dfrac{s(n-1) - s(n+1)}{4} \right\rfloor. \end{cases}$$

wherein x(n) is the original image; s(n) is a low resolution version of x(n), and d(n) and $d^{(1)}(n)$ represent differences between s(n) and x(n).

59. (previously presented) The method according to claim 52, wherein said low Y-direction wavelet transform comprises

$$\begin{cases} s(n) = x(2n) + x(2n+1), \\ d^{(1)}(n) = \left\lfloor \dfrac{x(2n+1) - x(2n) + \left\lfloor \dfrac{s(n-1) - s(n+1)}{8} \right\rfloor}{2} \right\rfloor, \\ d(n) = 2d^{(1)}(n). \end{cases}$$

wherein x(n) is the original image; s(n) is a low resolution version of x(n), and d(n) and $d^{(1)}(n)$ represent differences between s(n) and x(n).

60. (previously presented) The method according to claim 59, wherein bits able to be known a priori to a decoder are not encoded.

61. (previously presented) The method according to claim 59, wherein the least significant bit of d(n) is always zero and not encoded.

62. (previously presented) The method according to claim 52, wherein said high Y-direction wavelet transform comprises

$$\begin{cases} s(n) = \left\lfloor \dfrac{x(2n)+x(2n+1)}{2} \right\rfloor, \\ d^{(1)}(n) = x(2n+1) - x(2n), \\ d^{(2)}(n) = d^{(1)}(n) + \left\lfloor \dfrac{s(n-1)-s(n+1)}{4} \right\rfloor, \\ d(n) = \left\lfloor \dfrac{d^{(2)}(n)}{2} \right\rfloor, \\ HalfBit(n) = d^{(2)}(n) \bmod 2. \end{cases}$$

wherein x(n) is the original image; s(n) is a low resolution version of x(n), d(n) and $d^{(1)}(n)$ represent differences between s(n) and x(n) and *HalfBit*(*n*) represents said half-bits.

63-64. (canceled)